Friedrich®

SPLIT TYPE
ROOM AIR CONDITIONER
WALL MOUNTED type

SERVICE MANUAL

Models

Indoor unit	Outdoor unit
MW24C3F	MR24C3F
MW24Y3F	MR24Y3F

CONTENTS

SPECIFICATIONS

INDOOR UNIT	MW24C3F	MW24Y3F
OUTDOOR UNIT	MR24C3F	MR24Y3F
COOLING CAPACITY	24,200 BTU/hr	24,200 BTU/hr
HEATING CAPACITY	-	27,600 BTU/hr

ELECTRICAL DATA

POWER SOURCE		208 V / 230 V	208 V / 230 V
FREQUENCY		60Hz	60Hz
RUNNING CURRENT	COOLING	10.1 A	10.1 A
	HEATING	-	10.8 A
INPUT WATTS	COOLING	2,310 W	2,310 W
	HEATING	-	2,470 W
SEER		18.0	18.0
MOISTURE REMOVAL		6.3 Pts/hr (3.0 L/hr)	6.3 Pts/hr (3.0 L/hr)
AIR CIRCULATION -High		647 cfm (1,100 m^3/hr)	647 cfm (1,100 m^3/hr)

COMPRESSOR

TYPE		Hermetic motor compressor, 4 poles, Involute scroll type
DISCRIMINATION		5CS160 XAA23
POWER SOURCE		208 V / 230 V 60Hz
REFRIGERANT	R410A	3 lb. 8 oz (1,600 g)

FAN MOTOR

POWER SOURCE		208 V / 230 V	
INDOOR UNIT	HIGH	1,310 r.p.m.	
	MED	1,120 r.p.m.	
	LOW	940 r.p.m.	
	QUIET	830 r.p.m.	
OUTDOOR UNIT	COOL	1,000 r.p.m.	1,000 r.p.m.
	HEAT	-	1,050 r.p.m.

DIMENSIONS

INDOOR UNIT	H x W x D	12-5/8 x 39-1/4 x 9 inch
		320 x 998 x 228 mm
OUTDOOR UNIT	H x W x D	22-3/4 x 31-1/8 x 12-3/8 inch
		578 x 790 x 315 mm

WEIGHT

INDOOR UNIT	Gross / Net	40 / 31 lbs. (18 / 14 kg)
OUTDOOR UNIT	Gross / Net	106 / 97 lbs. (48 / 44 kg)

NOISE LEVEL

INDOOR UNIT	HIGH	47 dB	C 47 dB / H 45 dB
	MED	41 dB	C 41 dB / H 41 dB
	LOW	36 dB	C 36 dB / H 36 dB
	QUIET	32 dB	C 32 dB / H 32 dB
OUTDOOR UNIT		52 dB	C 52 dB / H 53 dB

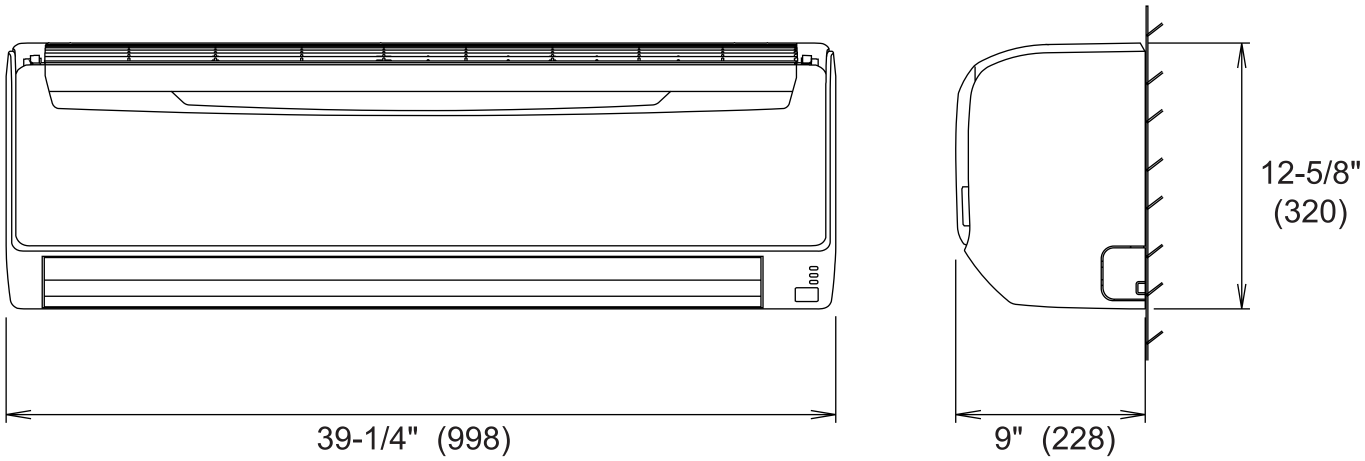
REFRIGERANT CHARGE (R410A)

FULL CHARGE AMOUNT / Pipe Length	15 m	3 lb. 8 oz. (1,600 g)
	20 m	3 lb. 12 oz. (1,700 g)
	25 m	3 lb. 15 oz. (1,800 g)
	30 m	4 lb. 3 oz. (1,900 g)
ADDITIONAL CHARGE		0.2 oz./ft. (20 g / m)

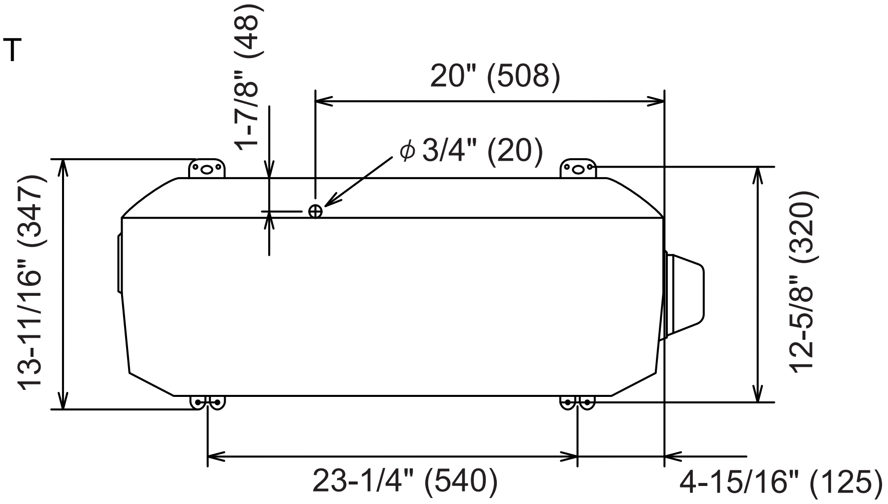
OUTLINE AND DIMENSIONS

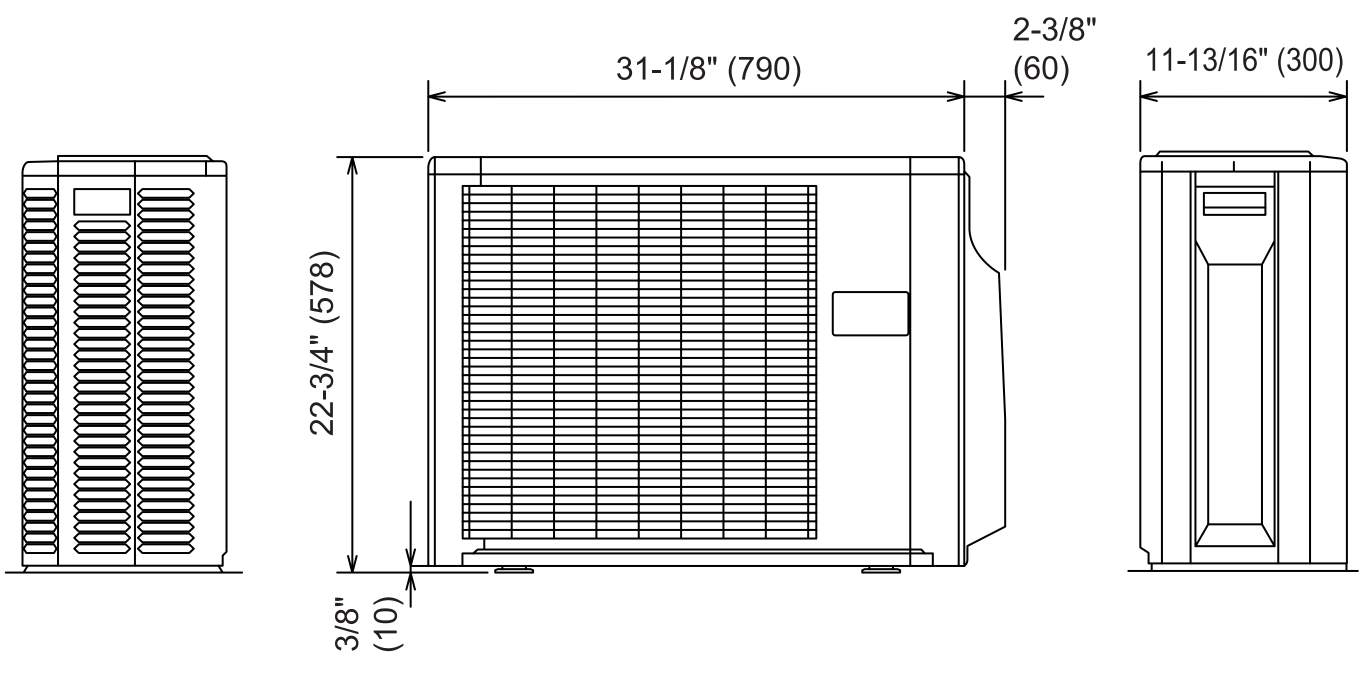
Unit : inch (mm)

INDOOR UNIT



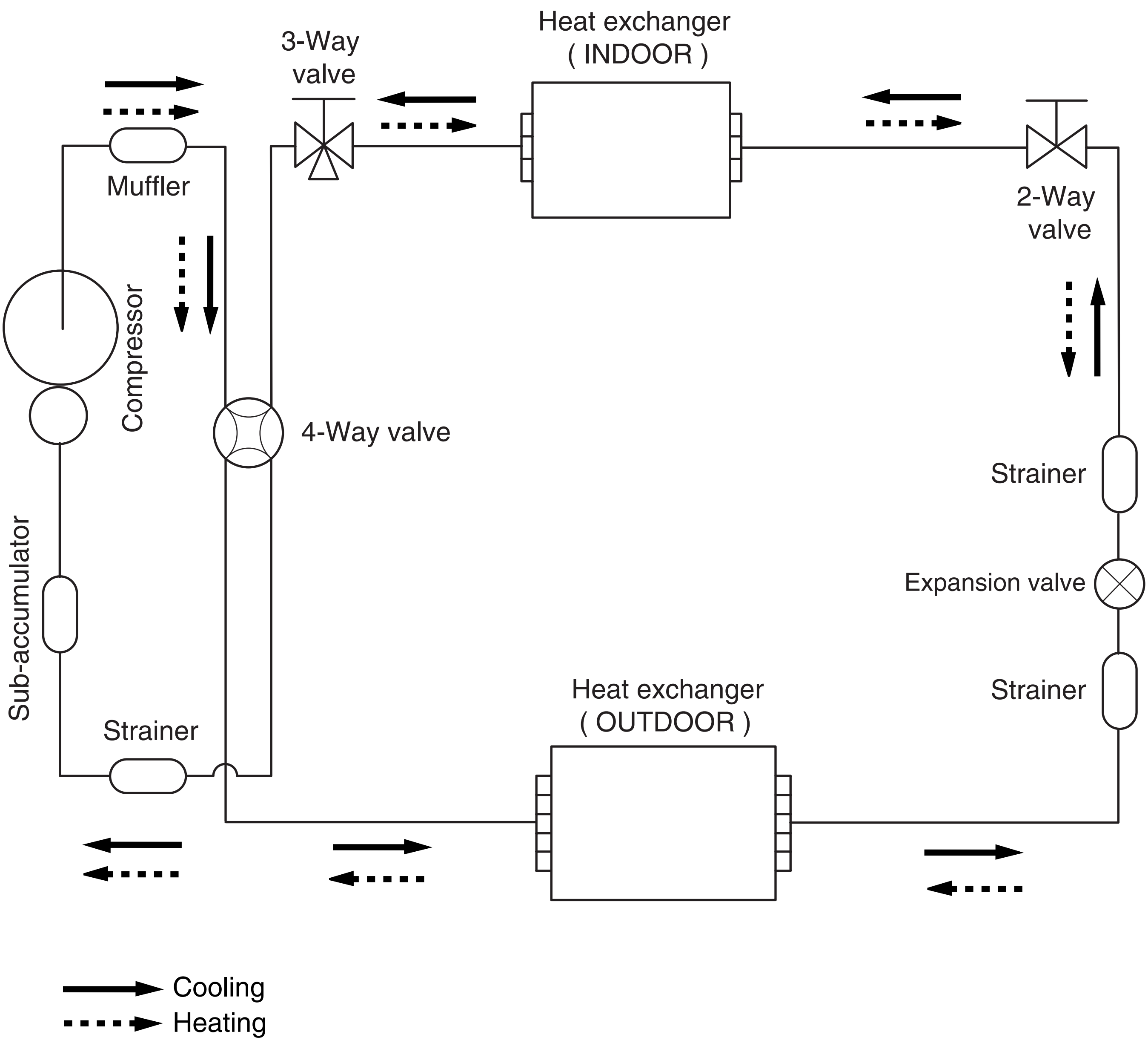
OUTDOOR UNIT





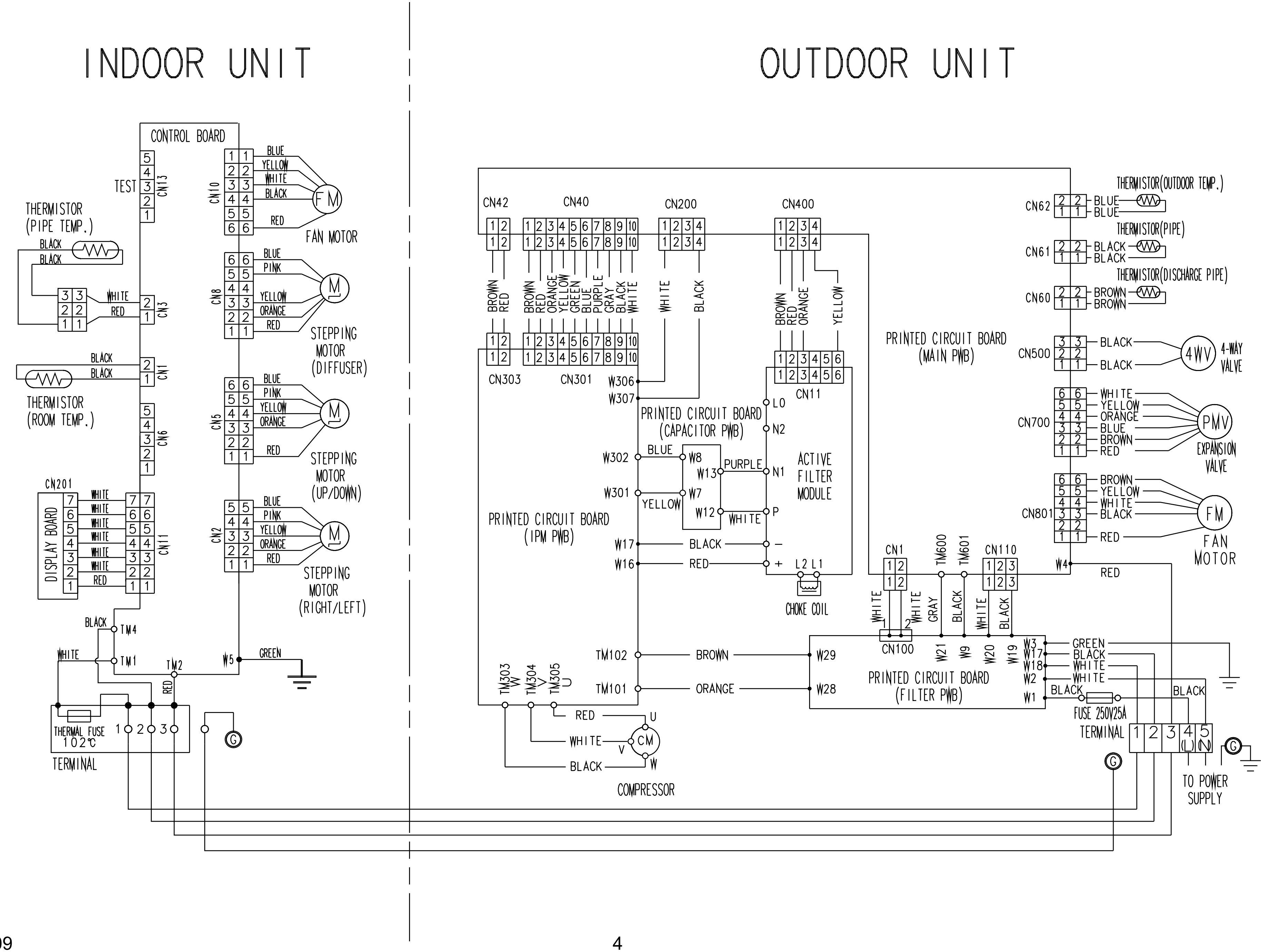
REFRIGERANT SYSTEM DIAGRAM

Models : MW24C3F / MR24C3F
MW24Y3F / MR24Y3F



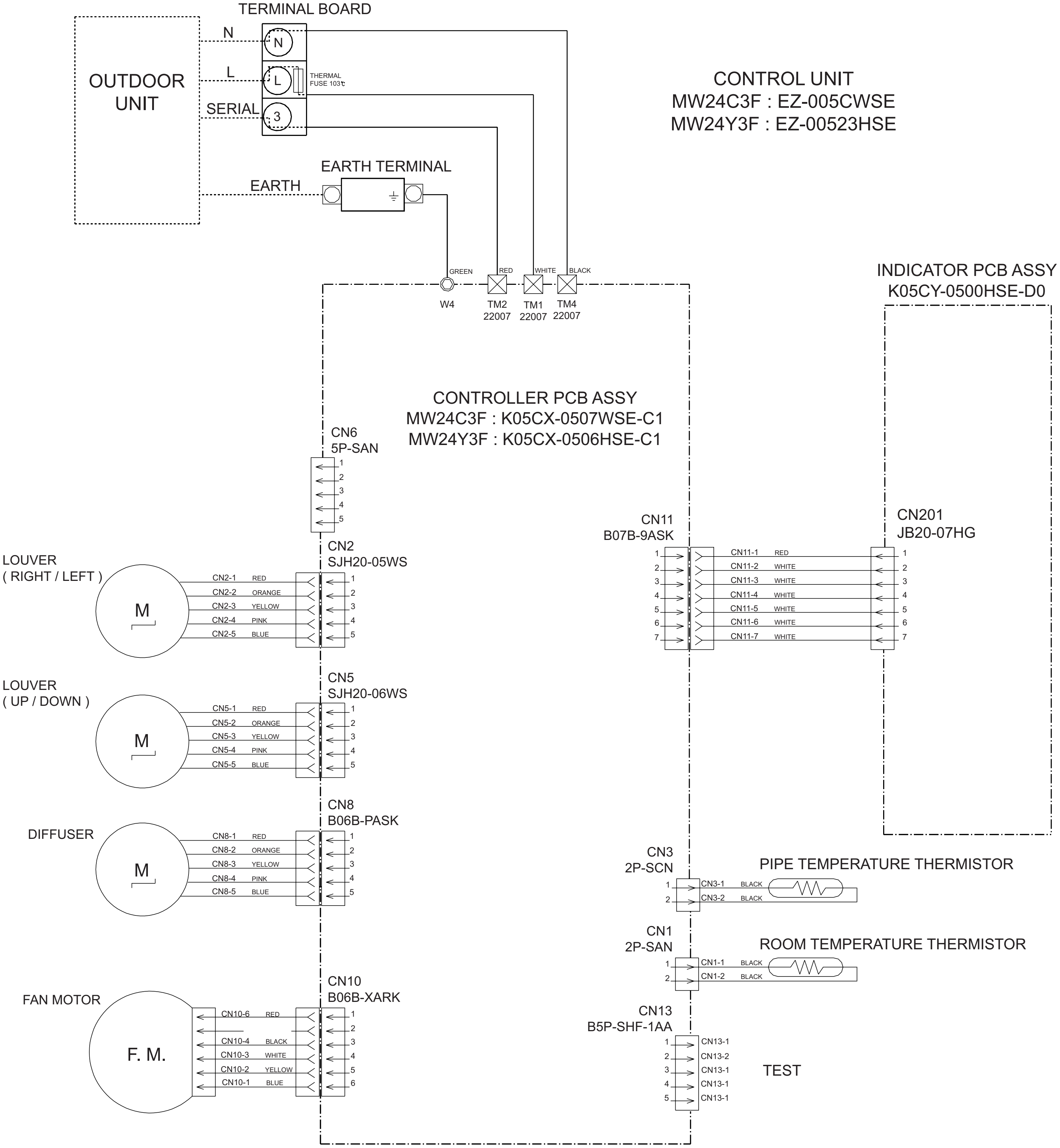
Refrigerant pipe diameter
Liquid : 1/4" (6.35 mm)
Gas : 5/8" (15.88 mm)

CIRCUIT DIAGRAM



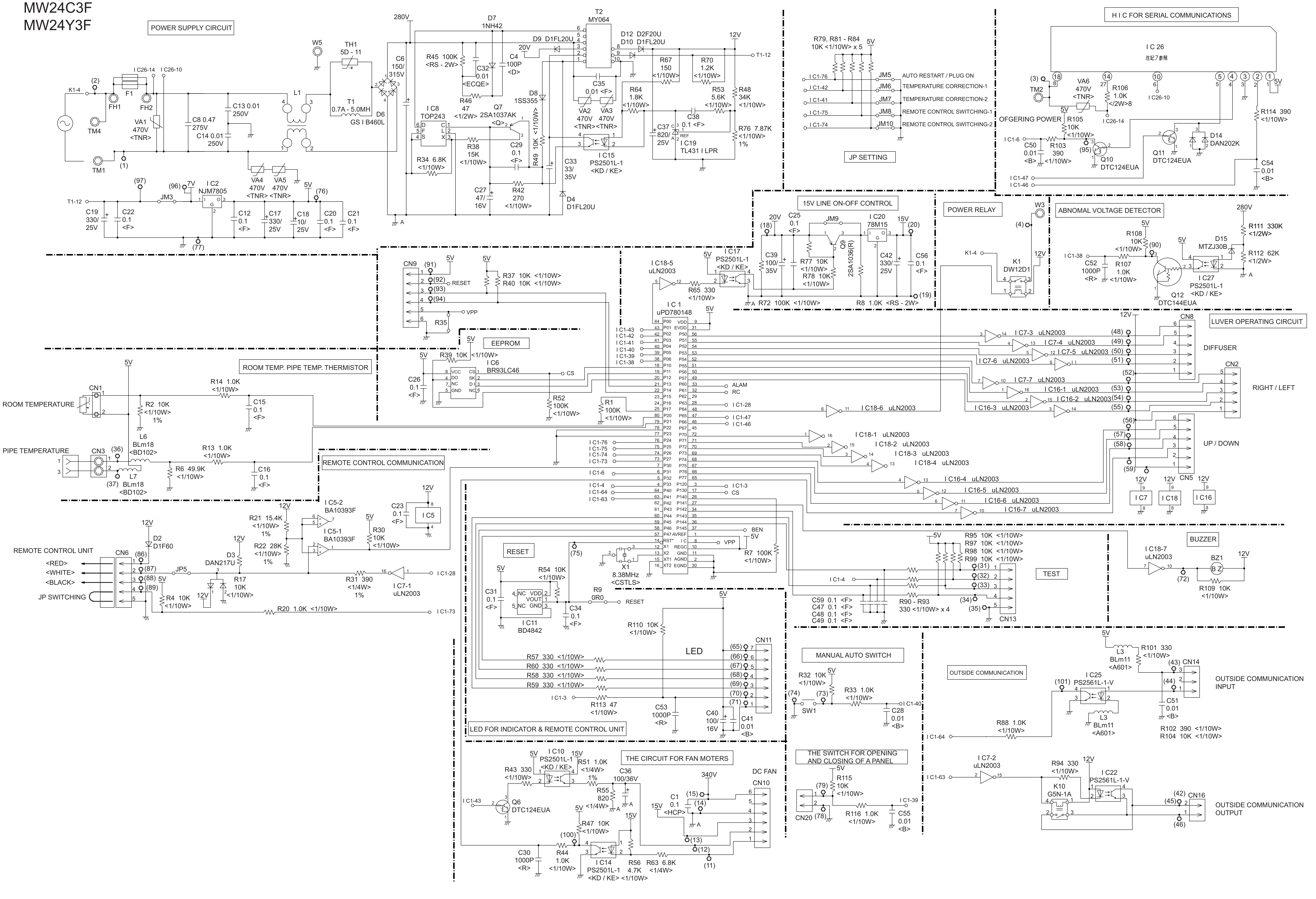
INDOOR PCB CIRCUIT DIAGRAM

Models :
MW24C3F
MW24Y3F



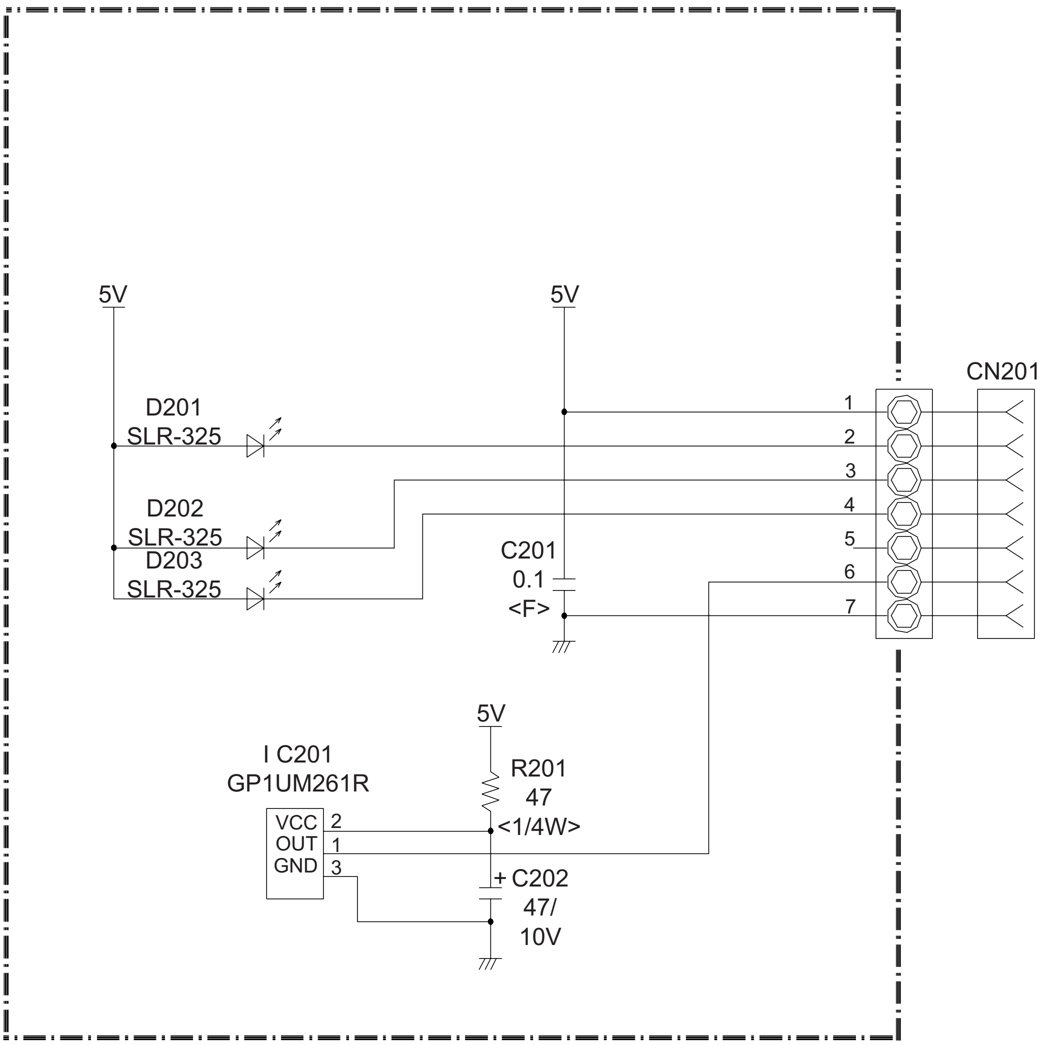
Models :
MW24C3F
MW24Y3F

CONTROLLER PCB ASSY
MW24C3F : K05CX-0507WSE-C1
MW24Y3F : K05CX-0506HSE-C1



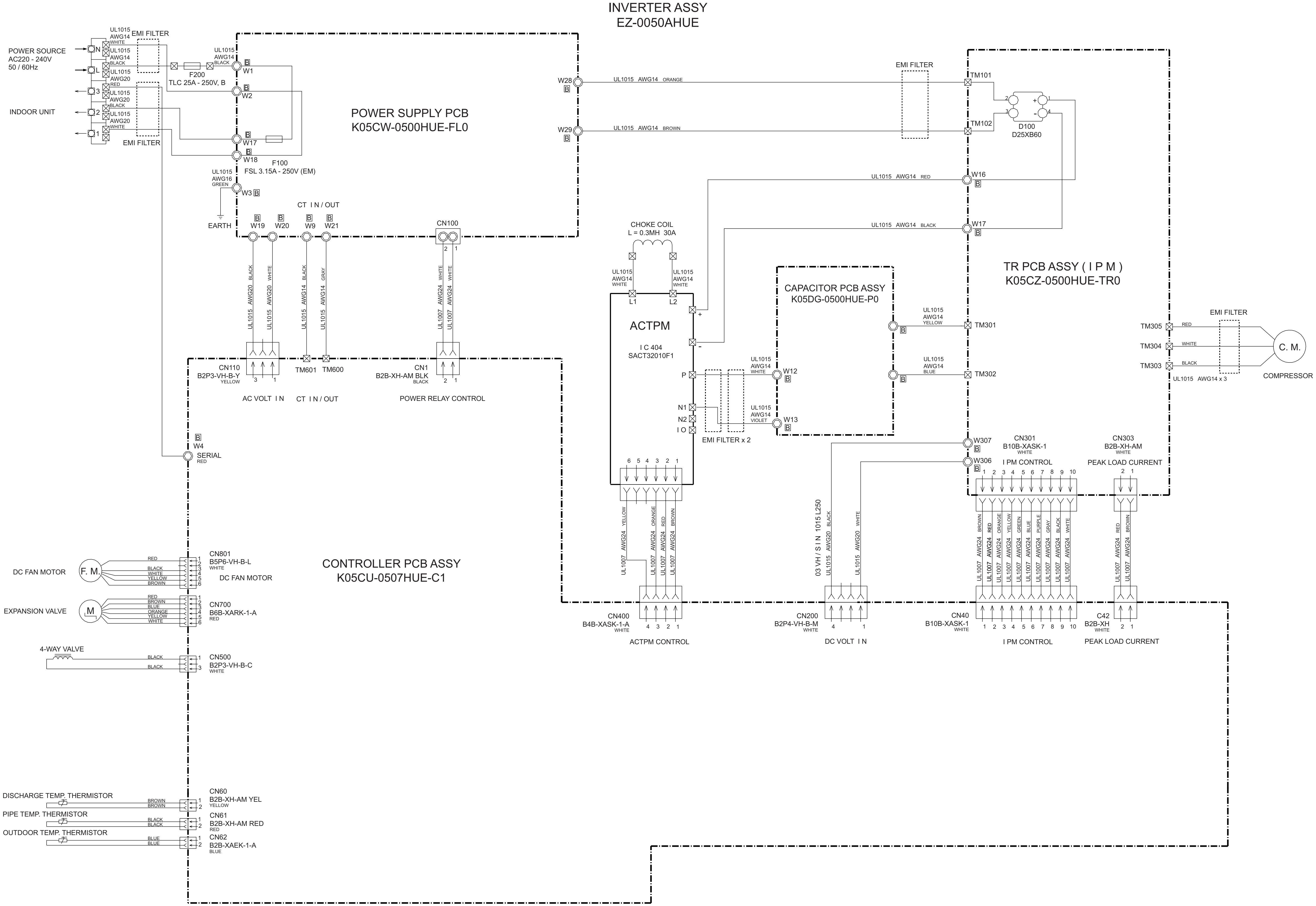
Models :
MW24C3F
MW24Y3F

INDICATOR PCB ASSY
K05CY-0500HSE-D0



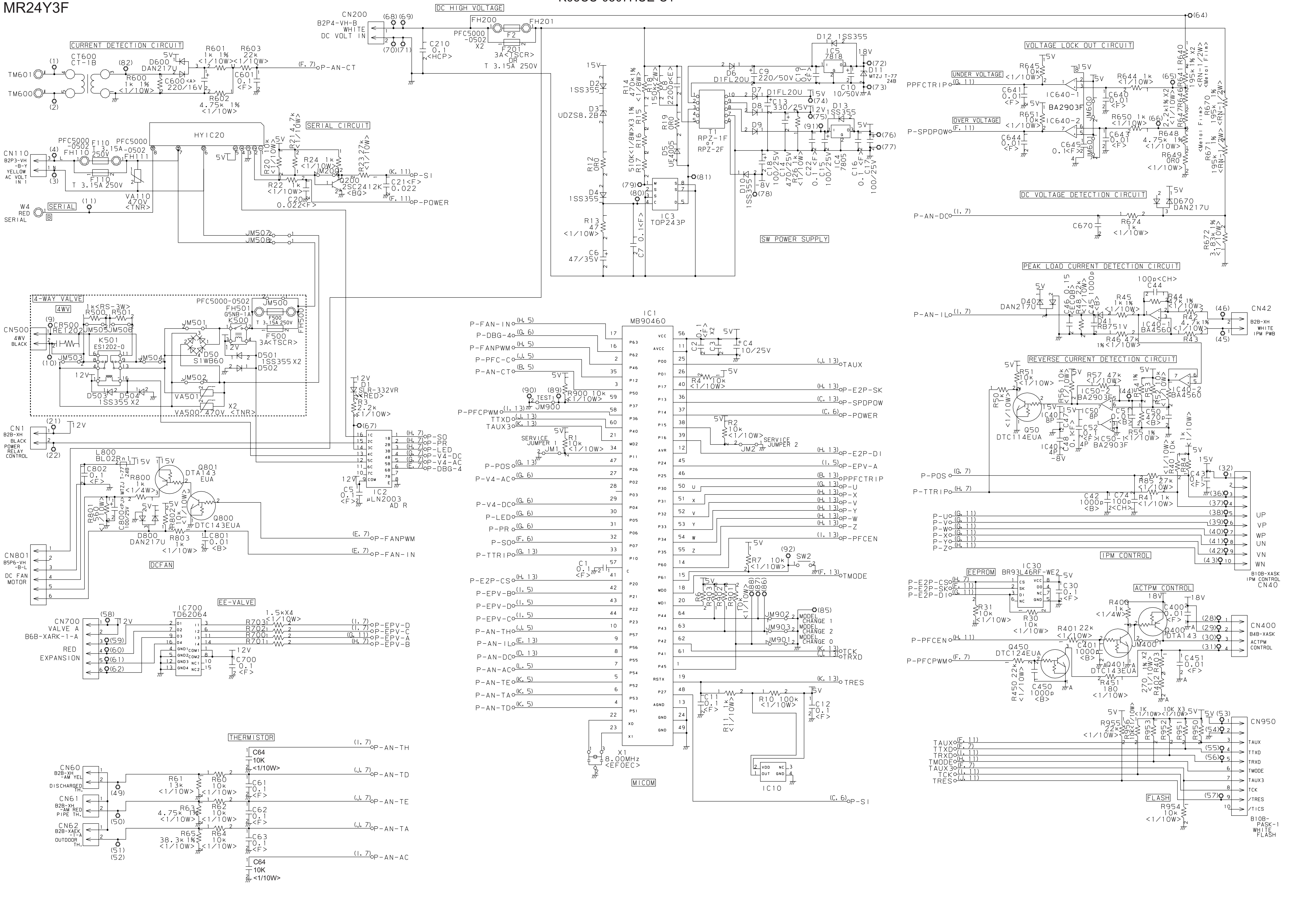
OUTDOOR PCB CIRCUIT DIAGRAM

Models :
MR24C3F
MR24Y3F



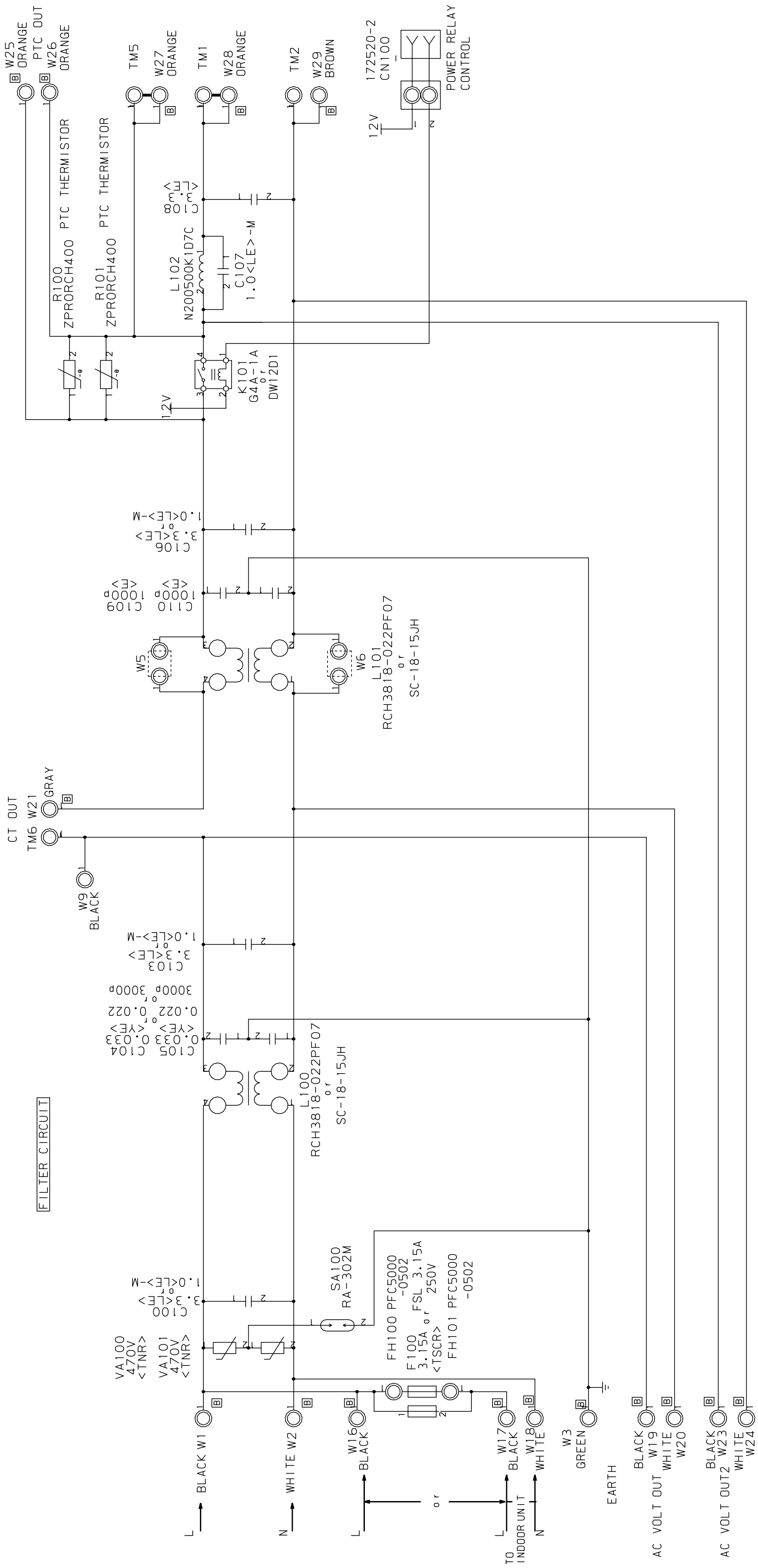
Models :
MR24C3F
MR24Y3F

CONTROLLER PCB ASSY
K05CU-0507HUE-C1



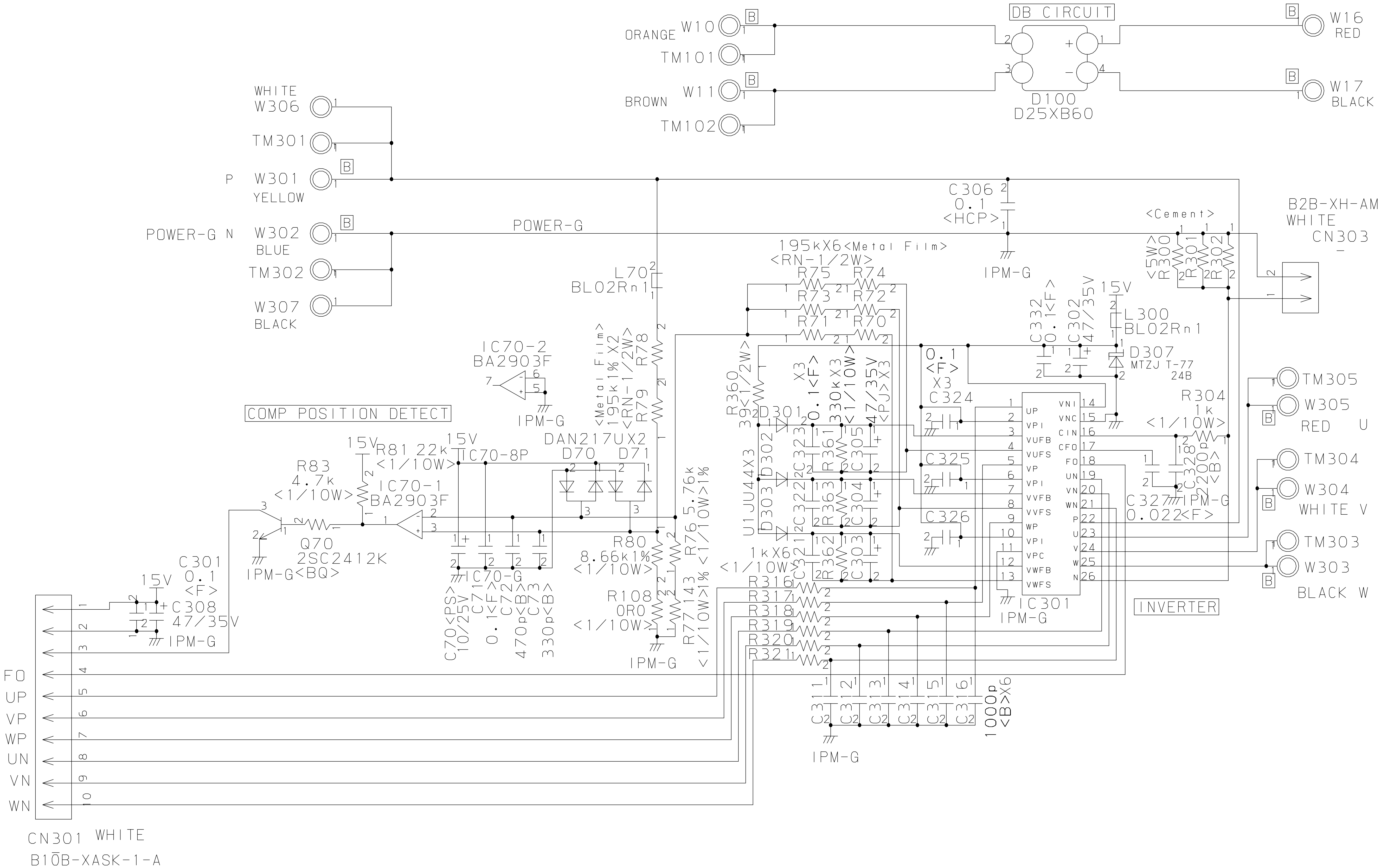
Models :
MR24C3F
MR24Y3F

POWER SUPPLY PCB
K05CW-0500HUE-FL0



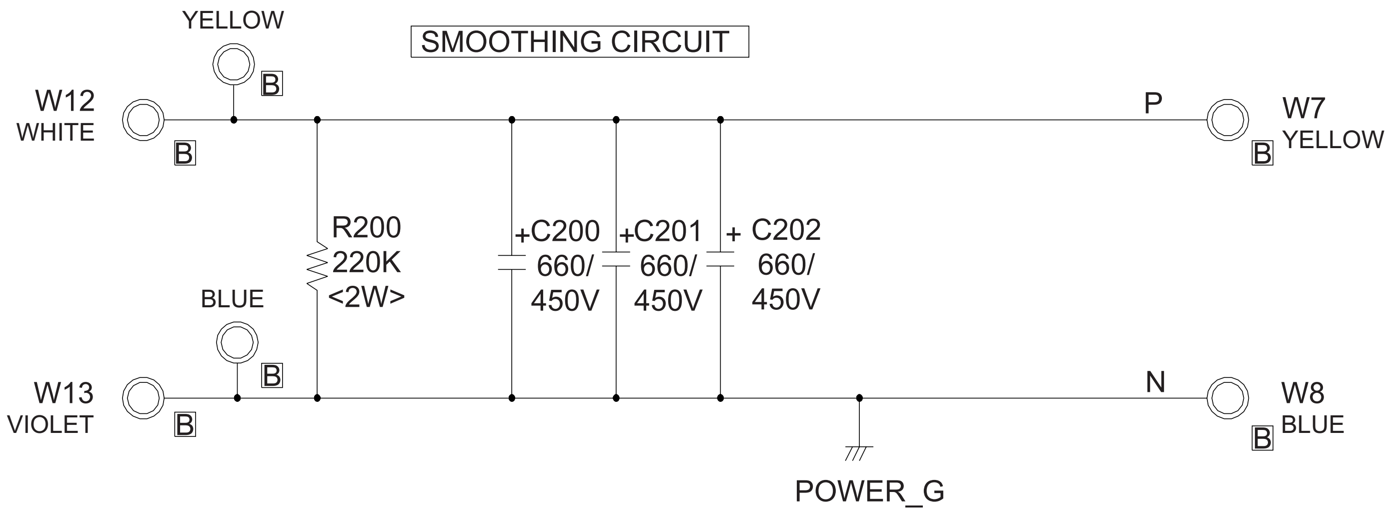
Models :
MR24C3F
MR24Y3F

TR PCB ASSY (I P M)
K05CZ-0500HUE-TR0



Models :
MR24C3F
MR24Y3F

CAPACITOR PCB ASSY
K05DG-0500HUE-P0

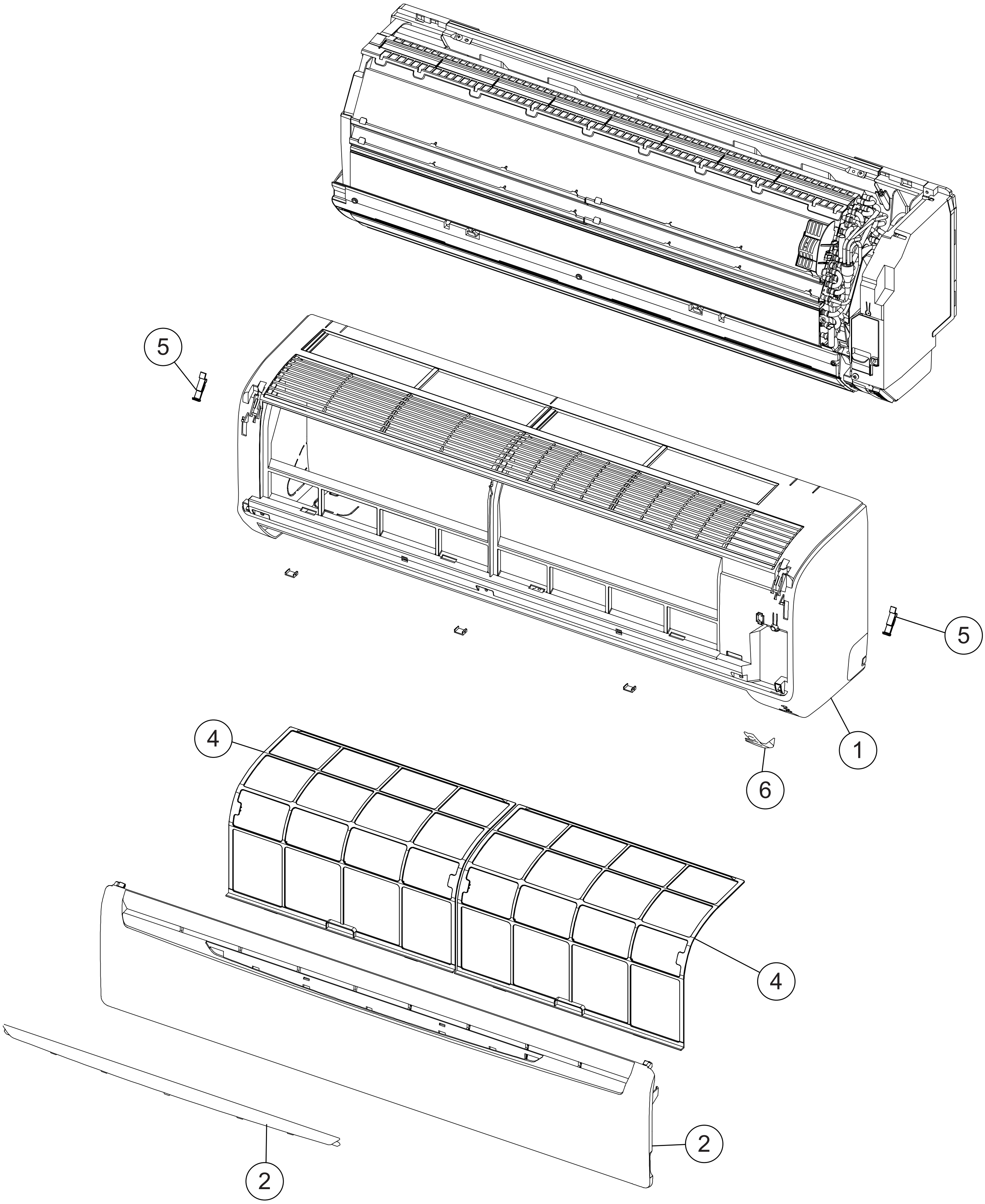


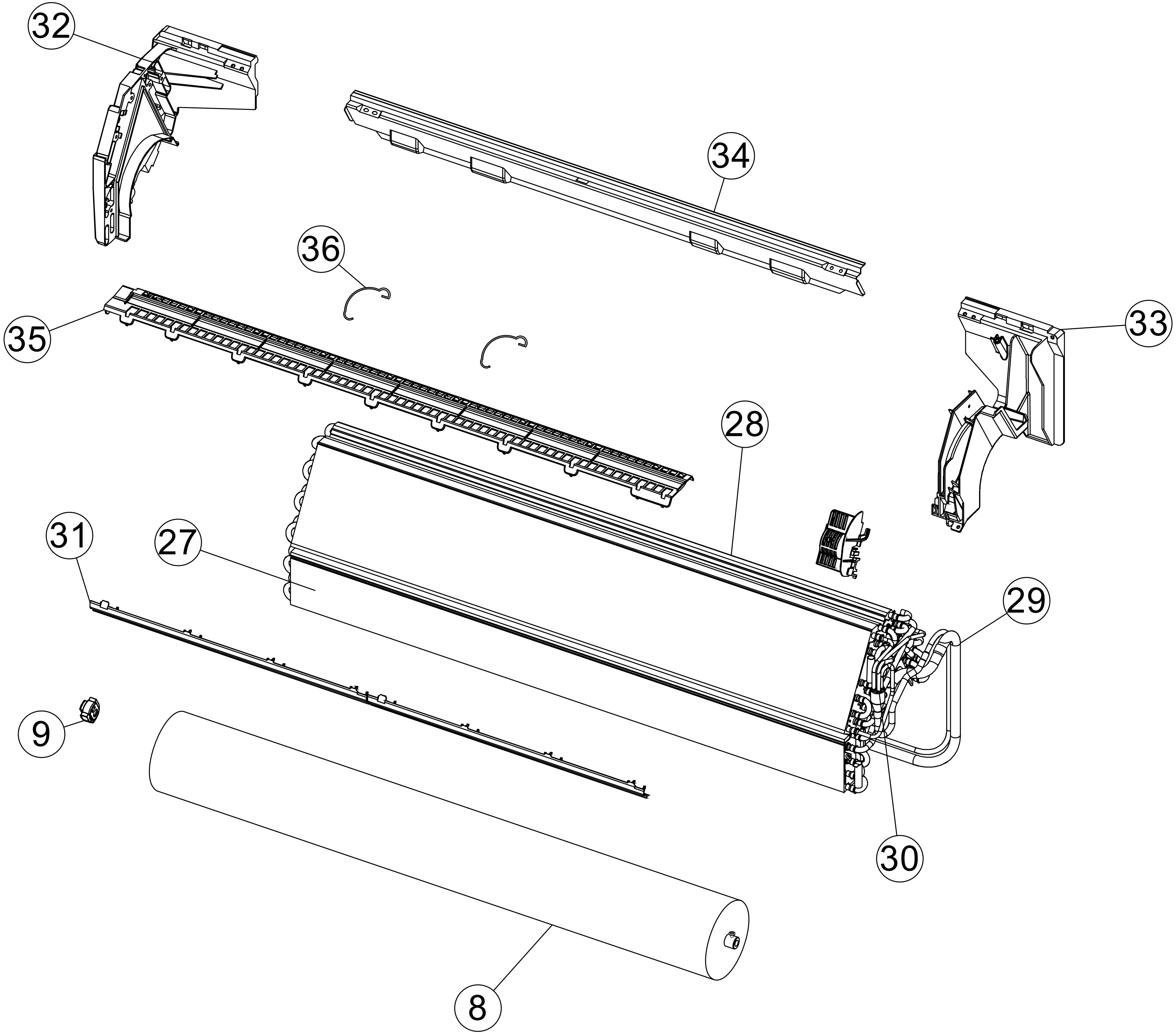
ERROR CONTENTS

Error	Display: Operation LED	Display: Timer LED	Error
Serial signal error	Normal	2 flash	Serial signal (reverse) error, at operation start up
		3 flash	Serial signal (reverse) error, during oeration
		4 flash	Serial signal (forward) error, at operation start up
		5 flash	Serial signal (forward) error, during operation
		8 flash	Wired remote controller error
Indoor unit thermistor error	2 flash	2 flash	Indoor temperature thermistor open / short
		3 flash	Heat exchanger middle thermistor open / short
Outdoor unit thermistor error	3 flash	2 flash	Discharge thermistor open / short
		3 flash	Heat exchanger thermistor open
		4 flash	Outdoor temperature thermistor open / short
		8 flash	Compressor temperature thermistor open / short
Indoor unit control error	4 flash	2 flash	Forced automatic SW welded
		3 flash	Main relay welded
		4 flash	Power interruption error
		7 flash	VDD permanent stop protection
		8 flash	reverse VDD permanent stop protection
Outdoor unit control error	5 flash	2 flash	Current trip error
		3 flash	CT abnormal
		5 flash	Compressor location detection error
		6 flash	Outdoor unit fan drive system abnormal
Indoor fan motor error	6 flash	2 flash	Abnormal lock
		3 flash	Abnormal rotation
Refrigerant cycle error	7 flash	2 flash	Discharge Temperature abnormal
		3 flash	Cooling high pressure abnormal rise
		5 flash	Pressure switch trouble
Optional function error	8 flash	2 flash	Active filter voltage trouble (second time)
		3 flash	Active filter voltage trouble (first time)
		4 flash	PFC circuit error
Model error	Blinking	Blinking	Model error

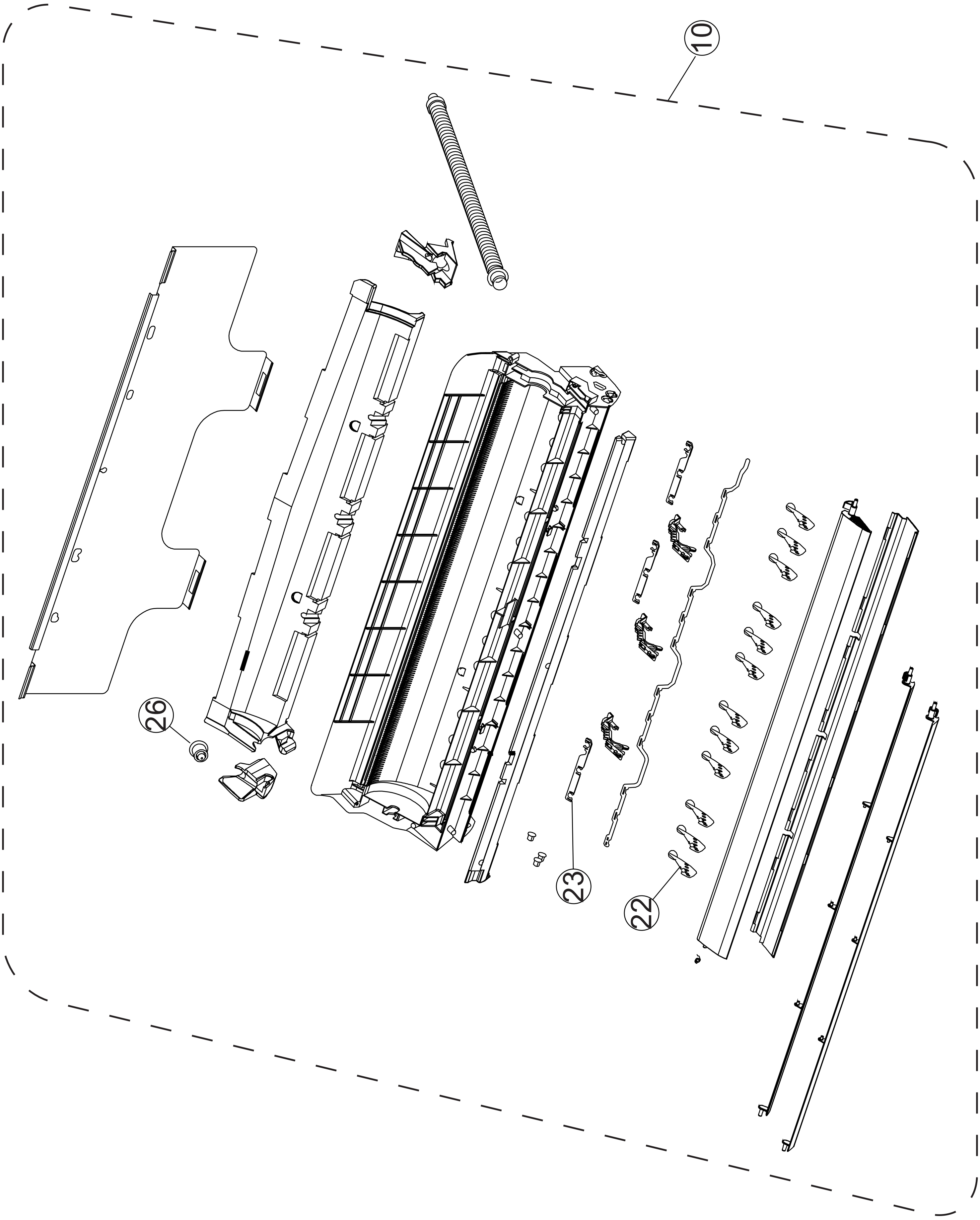
DISASSEMBLY ILLUSTRATION

Models：MW24C3F, MW24Y3F

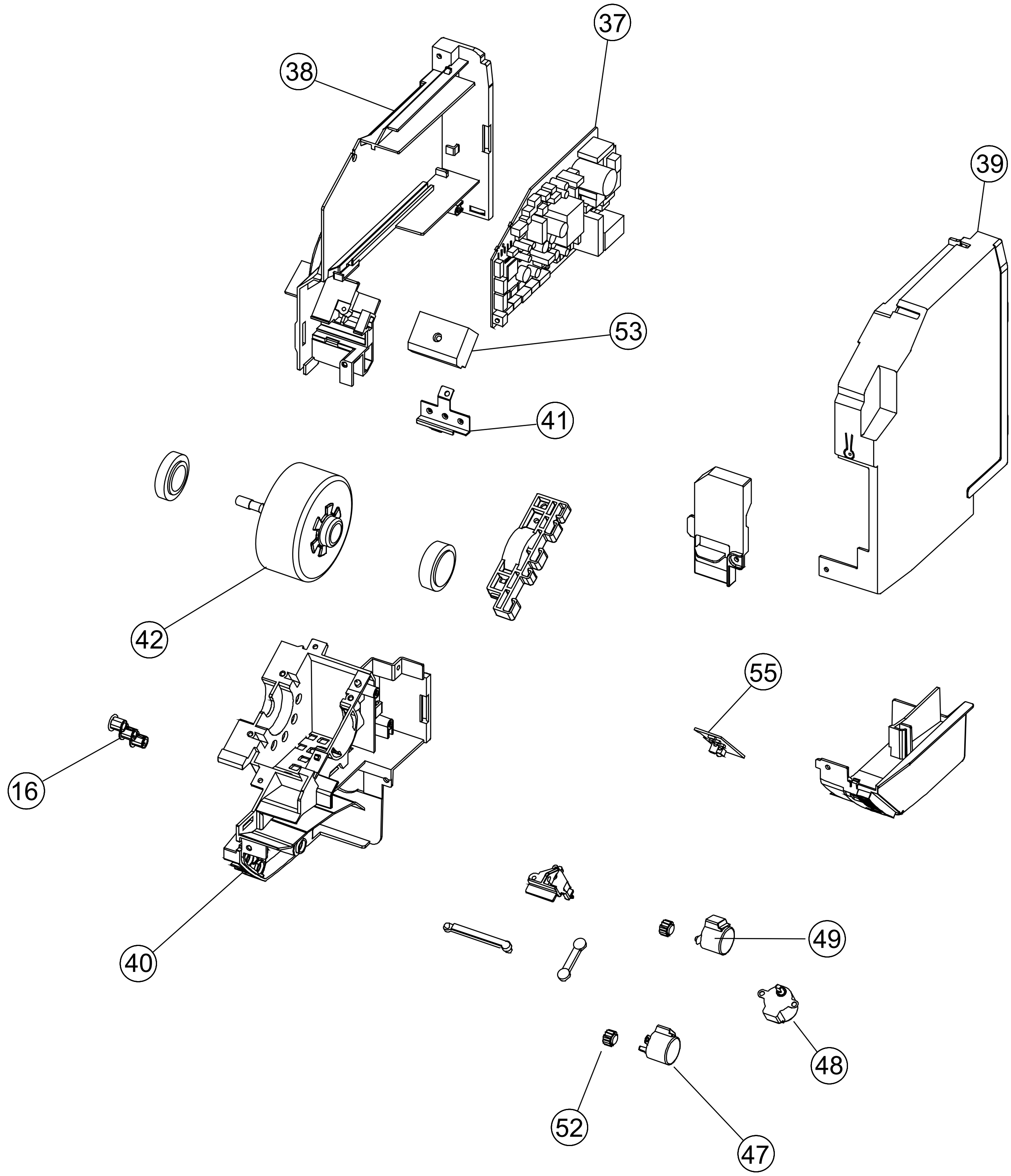



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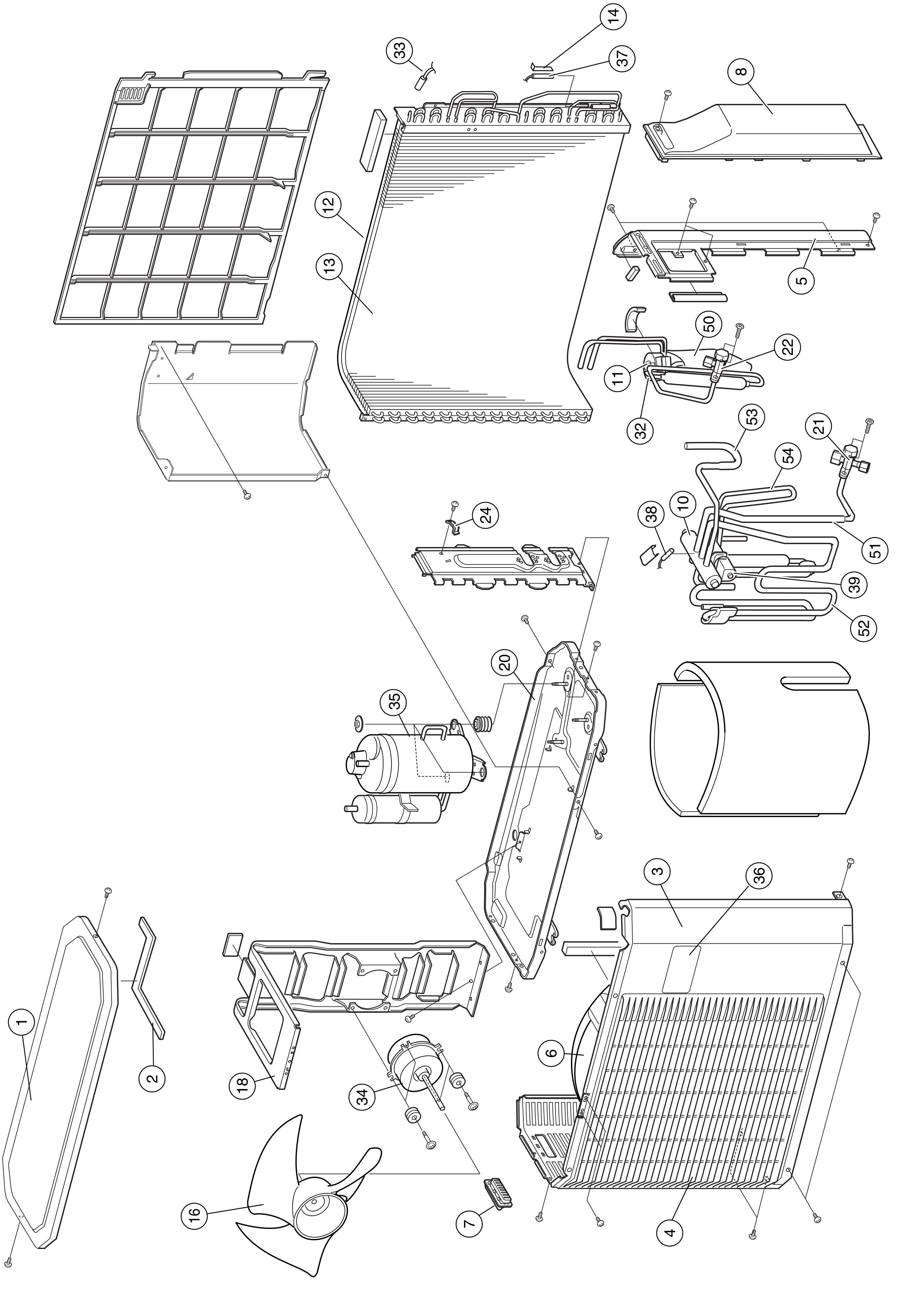
Models : MW24C3F, MW24Y3F



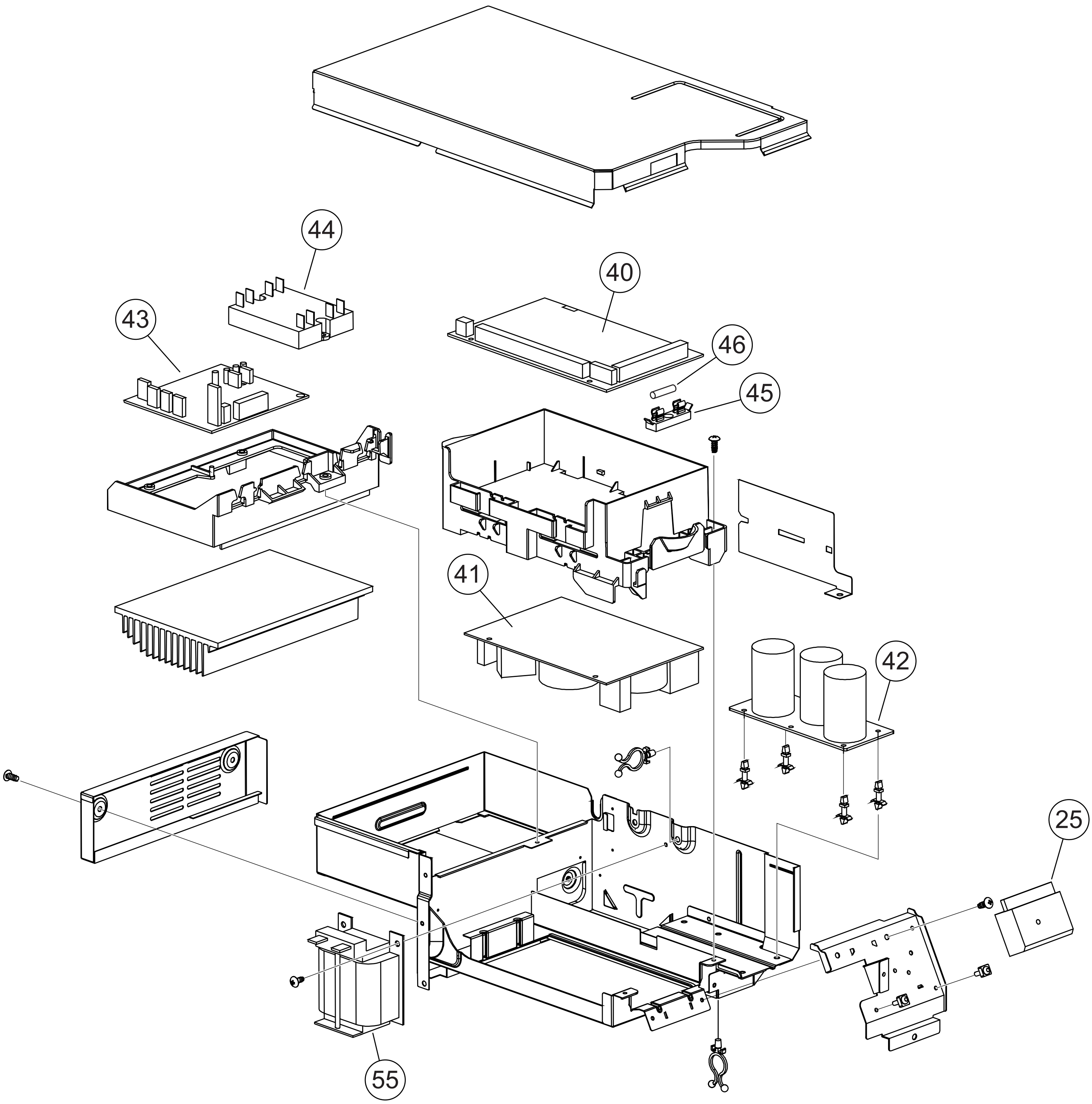
Models : MW24C3F, MW24Y3F



Models : MR24C3F, MR24Y3F



Models : MR24C3F, MR24Y3F



PARTS LIST

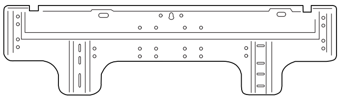
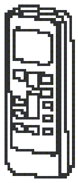
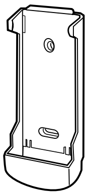
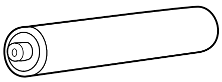
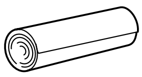
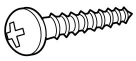
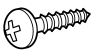
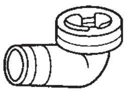
INDOOR UNIT

Ref No	Descriprion	Part No		Ord. Q'ty
		MW24C3F	MW24Y3F	
1	Front Panel Total Assy	9315335081	9315335074	
2	Intake Grille Assy	9315336064	9315336064	
4	Air Filter	9315014016	9315014016	
5	Clamper Grille	9306755010	9306755010	
6	Receiver Window	9315010018	9315010018	
8	Crossflow Fan Assy	9315024015	9315024015	
9	Bearing C Assy	9306628017	9306628017	
10	Casing Assy	9315331014	9315331014	
22	R and L Louver	9311997016	9311997016	
23	Spacer B	9312441013	9312441013	
26	Drain Cap	9367677009	9367677009	
27	Evaporator Assy	9315347015	9315347015	
28	Evaporator Assy B	9315349019	9315349019	
29	Connection Pipe Assy	9315354013	9315354013	
30	Distributor Assy	9315350015	9315350015	
31	Water Seal	9315251015	9315251015	
32	Evaporater Holder R	9314994012	9314994012	
33	Evaporater Holder L	9314995019	9314995019	
34	Rear Bracket	9315022011	9315022011	
35	Filter Guide	9315013019	9315013019	
36	Filter Guard	9315411013	9315411013	
37	Controller PCB Assy	9707090086	9707090079	
38	Control Box	9314996023	9314996023	
39	Control Cover	9314997020	9314997020	
40	Motor Case	9314998027	9314998027	
41	Terminal Earth	9315028013	9315028013	
42	DC Brushless Motor	9602163014	9602163014	
46	Motor, Step	9900384029	9900384029	
47	Motor, Step	9900384036	9900384036	
48	Motor, Step	9900139063	9900139063	
52	Gear A	9309994003	9309994003	
53	Terminal	9900385019	9900385019	
55	Display PCB Assy	9707210019	9707210019	
-	Remote Controller	9315027160	9315027153	

OUTDOOR UNIT

Ref No.	Description	Parts No.		
		MR24C3F	MR24Y3F	
1	Top Panel Assy	9309230057	9309230057	
2	Seal (Top)	9309228016	9309228016	
3	Cabinet Sub Assy	9314809019	9314809019	
4	Blow Grill	9308884015	9308884015	
5	Cabinet Right Assy	9309236028	9309236028	
6	Fan Ring	9308885012	9308885012	
7	Grip	9308880017	9308880017	
8	Switch Cover Assy	9309237049	9309237049	
10	4-Way Valve	9900163013	9900163013	
11	Pulse Motor Valve	9900056018	9900056018	
12	Condenser Assy B	9315303011	9315303011	
13	Condenser Assy	9315302014	9315302014	
14	Thermistor Spring A	313728262708	313728262708	
16	Propeller Fan	9309909014	9309909014	
18	Motor Bracket Assy	9313432027	9313432027	
20	Base Assy	9315296023	9315296023	
21	3-Way Valve Assy	9315414014	9315414014	
22	2-Way Valve Assy	9313062019	9313062019	
24	Cord Clamp	9307271014	9307271014	
25	Terminal, 5 Pin	9703874024	9703874024	
32	Expansion Valve Coil	9900057039	9900057039	
33	Outdoor Temp. Thermistor	9703516108	9703516108	
34	DC Brushless Motor	9602110018	9602110018	
35	Compressor Assy	9315297013	9315297013	
36	Emblem Rear	9312661015	9312661015	
37	Heat Exchanger Thermistor	9704220059	9704220059	
38	Discharge Thermistor	9704219091	9704219091	
39	Solenoid	9970055010	9970055010	
40	Inverter PCB Assy	9707121124	9707121124	
41	Power PCB Assy	9707128055	9707128055	
42	Power PCB Assy	9707129052	9707129052	
43	TR PCB Assy	9707125054	9707125054	
44	ACTPM	9703457012	9703457012	
45	Fuse Holder	0500158072	0500158072	
46	Fuse	0600086039	0600086039	
50	Pulse Motor Valve Assy	9315310019	9315310019	
51	JNT PIPE(3WV)AS	9315308016	9315308016	
52	PIPE(COND OLT)AS	9315304018	9315304018	
53	PIPE(COND ILT)AS	9315305015	9315305015	
54	Discharge Pipe Assy	9315312013	9315312013	
55	Chock Coil	9900366018	9900366018	

STANDARD ACCESSORIES

Name and Shape	Part No.
Wall hook bracket 	9315023018
Remote control unit 	9315027160 (for cooling only) 9315027153 (for heat and cool)
Remote control unit holder 	9305642045
Battery (penlight) 	0600185534
Cloth tape 	9310519004
Tapping screw (big) 	0700076046
Tapping screw (small) 	0700019036
Drain pipe 	9301102000 (for heat and cool)